

A NEW SPECIES OF COPTODISCA. (LEPID.)

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Coptodisca kalmiella, n. sp.

Size minute. Head, palpi and antennæ silvery gray, the latter long. Forewings golden-brown from the base to about the middle of their length, passing gradually into golden yellow; a silvery, triangular band-like spot at about two-thirds the wing length, on both the costal and posterior margins, the apices of which nearly meet on the disk, and margined proximally and distally with black. Cilia nearly double the width of the wing, traversed by the bases of the black-margined silvery spots, a black costal stria before the apex; a trapezoidal black spot in basal two-thirds of the cilia, at the apex, surmounted by a black line extending to the edge of the cilia; basal two-thirds of dorsal cilia in apical third with two broad, concentric lines separated by a pale line of the ground colour; proximad to this is a brownish tuft, from base to free margin of cilia; rest of cilia, a brownish gray. Hind wings very narrow; cilia about three times their width. Legs and body, silvery gray.

Habitat.—Browns Mills, N. J., mining leaves of *Kalmia angustifolia*. Collectors, H. B. Weiss and C. S. Beckwith, June 22 to June 30. Type and paratypes in collection of H. B. Weiss.

NOTES ON COPTODISCA KALMIELLA DIETZ, A LEAF MINER OF KALMIA ANGUSTIFOLIA.

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This microlepidopteron first attracted our attention at Brown's Mills, N. J., by its work on the leaves of sheep laurel (*Kalmia angustifolia* L.) which were observed to be full of small oval holes. Closer observation revealed mines inhabited by lepidopterous larvæ and upon rearing them, we secured a species of *Coptodisca* which was kindly described by Dr. W. G. Dietz as *kalmiella*.

The mines of this species are irregular and blotch-like, extending from the midrib almost and sometimes entirely to the edge of the narrow leaf. They are visible on both sides of a leaf, more so on the upper where they appear as reddish brown, dry areas partly filled with excrement. The number of mines in a leaf varied from one to twelve. Twenty-nine leaves were found to average five mines to a leaf. In some leaves many of the mines ran together and took up most of the leaf surface. Leaves on all parts of the plants were infested, especially terminal ones.

During the last week of May many mines were found to contain full-grown larvæ, and many were empty. From this it appears as if the larvæ over-wintered in the mines and that our observations started just as the larvæ were leaving. When full grown the larva cuts an oval case (3 mm. long; 1.6 mm. wide) from a part of the mine which is free from excrement, this case consisting of the semi-transparent upper and lower leaf surfaces which are fastened together. This oval case is regular in outline with a clean cut edge. When the oval is completely cut, the case containing the larva either drops to the ground or the larva crawls to the tip of a leaf pulling the case after it, and finally drops

to the ground after hanging a short time suspended by a thread. Once on the ground the larva crawls under fallen leaves, etc., and pupates within the case, this stage requiring from two to three weeks, the moths appearing about June 20 and being plentiful a week later around sheep laurel in the field. In order to facilitate the emergence of the moth, the pupal case projects slightly from the oval case. It is not known how many broods occur in New Jersey. Probably the over-wintering larvæ are those which hatch from eggs deposited during July.

Kalmia angustifolia L., is frequent in sandy ground, especially around the edges of bogs in the pine barrens and often covers large areas. In view of this, the miner should be found in many other localities in the pine barrens. Dr. Dietz writes that he has bred this species in numbers from sheep laurel collected in Pennsylvania and has noted as many as twelve to fourteen mines in a single leaf.

Full-grown Larva.—Length 3.4 mm. Width 0.5 mm. Head and first two segments brownish, remainder of body white with greenish tinge, somewhat translucent; elongate, tapering slightly posteriorly; body notched at sides, flattened dorso-ventrally; head small, mouth-parts dark, first thoracic segment longest, second and third thoracic segments subequal in length; abdominal segments subequal in length except in the ultimate and penultimate which combined approximate the length of the preceding segment; first thoracic segment not quite as wide as the second and third which are subequal in width; abdominal segments subequal in width except the last three or four which are narrower; prothorax bears a dorsal, dark spot which covers most of the surface; dorsum of meso- and metathorax bears a somewhat similar dark area each with separated, subcircular light areas. First seven abdominal segments bear irregular, oval, ill-defined dark areas; dorsal markings of eighth abdominal segment somewhat similar to those on dorsal surface of metathorax, the subcircular light areas may be fused or only slightly separated; dorsal surfaces of remaining abdominal segments may bear indications of dark areas or be entirely light; ventral surface and markings similar to those of dorsal surface except that the dark areas on the third, fourth, fifth and sixth abdominal segments are replaced by dark, oval rings; head and sides of each thoracic segment bear several fine hairs; a single hair on side of each abdominal segment; dark areas appear to be finely shagreened; shagreening on prothorax more pronounced.

Another lepidopterous miner of sheep laurel was described by Dr. Dietz in 1907 (Tr. Am. Ent. Soc. XXXIII, p. 291). This is *Ornix kalmiella*, the larva of which makes a pale, orange-coloured, blotch-like mine in the upper side of a leaf. The localities for this species as given by Dr. Dietz are Pa. and Conn., larvæ, August and September; adults, following May.

CHANGE OF ADDRESS.

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